

What is claimed is:

1 1. A windshield wiper drive for imparting
2 overlapping butterfly oscillation to a pair of spaced
3 wiper shafts from a rotary drive member having a crank
4 arm comprising:

5 a drive link having first, second, and third
6 connection points, the first connection point adjacent
7 one end of the drive link and pivotally connectible to
8 the crank arm of the rotary drive member, the second
9 connection point adjacent an opposite end of the drive
10 link, and the third connection point interposed between
11 the first connection point and the second connection
12 point along the drive link;

13 an idler pivot link pivotable about a fixed
14 axis and having at least three crank arms extending
15 radially from the fixed axis and spaced from one another;

16 a first elongate link pivotally connected at
17 one end to a first crank arm of the idler pivot link and
18 pivotally connected at an opposite end to the second
19 connection point of the drive link;

20 a second elongate link pivotally connected at
21 one end to a second crank arm of the idler pivot link and
22 pivotally connected at an opposite end to the third
23 connection point of the drive link, the first and second
24 elongate links crossing with respect to one another; and

25 a third elongate link pivotally connected at
26 one end to a third crank arm of the idler pivot link and
27 pivotally connectible at an opposite end for driving a
28 first one of the pair of spaced wiper shafts.

1 2. The windshield wiper drive of claim 1
2 further comprising:

3 the idler pivot link having a fourth crank arm;
4 and

5 a fourth elongate link pivotally connected at
6 one end to the fourth crank arm of the idler pivot link

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7 and pivotally connectible at an opposite end for driving
8 a second one of the pair of spaced wiper shafts.

1 3. The windshield wiper drive of claim 1
2 further comprising:

3 a fourth elongate link pivotally connectible at
4 one end to the crank arm of the rotary drive member and
5 pivotally connectible at an opposite end for driving a
6 second one of the pair of spaced wiper shafts.

1 4. The windshield wiper drive of claim 1
2 further comprising:

3 the first, second, and third crank arms of the
4 idler pivot link spaced angularly from one another about
5 the fixed axis.

1 5. The windshield wiper drive of claim 1
2 further comprising: *combination?*

3 the fixed axis of rotation for the idler pivot
4 link spaced from the wiper shafts.

1 6. In a windshield wiper drive system for
2 imparting overlapping butterfly oscillation to a pair of
3 spaced wiper shafts, the improvement comprising:

4 idler pivot link means connectible to at least
5 one of the pair of spaced wiper shafts for imparting
6 lower acceleration oscillation in proximity to a reversal
7 position of each connected wiper shaft than imparted
8 intermediate a park position and the reversal position of
9 each connected wiper shaft.

1 7. The improvement of claim 6 further
2 comprising:

3 a rotary drive member having a crank arm
4 connectible to the idler pivot link means for driving the
5 idler pivot link means in rotation about a fixed axis.

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1 9. The improvement of claim 6 wherein the
2 idler pivot link means further comprises:
3 a drive link having first, second, and third
4 connection points, the first connection point adjacent
5 one end of the drive link and pivotally connectible to a
6 crank arm of a rotary drive member, the second connection
7 point adjacent an opposite end of the drive link, and the
8 third connection point interposed between the first
9 connection point and the second connection point along
10 the drive link;

14 a first elongate link pivotally connected at
15 one end to a first crank arm of the idler pivot link and
16 pivotally connected at an opposite end to the second
17 connection point of the drive link;

23 a third elongate link pivotally connected at
24 one end to a third crank arm of the idler pivot link and
25 pivotally connectible at an opposite end for driving a
26 first one of the pair of spaced wiper shafts.

1 10. The improvement of claim 9 further
 2 comprising:
 3 the idler pivot link having a fourth crank arm;
 4 and
 5 a fourth elongate link pivotally connected at
 6 one end to the fourth crank arm of the idler pivot link
 7 and pivotally connectible at an opposite end for driving
 8 a second one of the pair of spaced wiper shafts.

1 11. The improvement of claim 9 further
 2 comprising:
 3 a fourth elongate link pivotally connectible at
 4 one end to the crank arm of the rotary drive member and
 5 pivotally connectible at an opposite end for driving a
 6 second one of the pair of spaced wiper shafts.

1 12. The improvement of claim 9 further
 2 comprising:
 3 the first, second, and third crank arms of the
 4 idler pivot link spaced angularly from one another about
 5 the fixed axis.

1 13. The improvement of claim 9 further
 2 comprising:
 3 the fixed axis of rotation for the idler pivot
 4 link spaced from the wiper shafts.

1 14. In a windshield wiper drive system for
 2 imparting overlapping butterfly oscillation to a pair of
 3 spaced wiper shafts, the improvement comprising:
 4 idler pivot link means rotatable about a fixed
 5 axis and connectible to at least one of the pair of
 6 spaced wiper shafts for imparting a dwell in oscillation
 7 in proximity to a park position of the at least one of
 8 the connected wiper shafts.

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1 15. The improvement of claim 14 further
2 comprising:

3 a rotary drive member having a crank arm
4 connectible to the idler pivot link means for driving the
5 idler pivot link means in rotation about the fixed axis.

1 16. The improvement of claim 14 wherein the
2 idler pivot link means further comprises:

3 a drive link having first, second, and third
4 connection points, the first connection point adjacent
5 one end of the drive link and pivotally connectible to a
6 crank arm of a rotary drive member, the second connection
7 point adjacent an opposite end of the drive link, and the
8 third connection point interposed between the first
9 connection point and the second connection point along
10 the drive link;

11 an idler pivot link pivotable about a fixed
12 axis and having at least three crank arms extending
13 radially from the fixed axis and spaced from one another;

14 a first elongate link pivotally connected at
15 one end to a first crank arm of the idler pivot link and
16 pivotally connected at an opposite end to the second
17 connection point of the drive link;

18 a second elongate link pivotally connected at
19 one end to a second crank arm of the idler pivot link and
20 pivotally connected at an opposite end to the third
21 connection point of the drive link, the first and second
22 elongate links crossing with respect to one another; and

23 a third elongate link pivotally connected at
24 one end to a third crank arm of the idler pivot link and
25 pivotally connectible at an opposite end for driving a
26 first one of the pair of spaced wiper shafts.

2 1 17. The improvement of claim 16 further
2 comprising:

3 the idler pivot link having a fourth crank arm;
4 and

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5 a fourth elongate link pivotally connected at
6 one end to the fourth crank arm of the idler pivot link
7 and pivotally connectible at an opposite end for driving
8 a second one of the pair of spaced wiper shafts.

1 18. The improvement of claim 16 further
2 comprising:

3 a fourth elongate link pivotally connectible at
4 one end to the crank arm of the rotary drive member and
5 pivotally connectible at an opposite end for driving a
6 second one of the pair of spaced wiper shafts.

1 19. The improvement of claim 16 further
2 comprising:

3 the first, second, and third crank arms of the
4 idler pivot link spaced angularly from one another about
5 the fixed axis.

1 20. The improvement of claim 16 further
2 comprising:

3 the fixed axis of rotation for the idler pivot
4 link spaced from the wiper shafts.

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